ROSTOVTSEV, N.F., akademik, glavnyy red.toma; SOKOLOV, N.S., prof., red. toma; LETUNOV, P.A., kand.geol.-mineral.nauk, red.toma; KUZMICHEV, A.V., kand.biolog.nauk, red.toma; KRYLOV, P.A., kand.biolog.nauk, red.toma; RUZSKAYA, Ye.A., kand.biolog.nauk, red.toma; CHEMBER, B.Ye., kand.biolog.nauk, red.toma; BARDIN, I.P., akademik, glavnyy red. [deceased]; LAVRENT'YEV, M.A., akademik, red.; VOL'FKOVICH, S.I., akademik, red.; DIKUSHIN, V.I., akademik, red.; NEMCHINOV, V.S., akademik, red.; VEYTS, V.I., red.; LEVITSKIY, O.D., red.; NEKRASOV, N.N., red.; PUSTOVALOV, L.V., red.; KHACHATUROV, T.S., red.; POPOV, A.N., red.; GRAFOV, L.Ye., red.; GASHEV, A.D., red.; VASYUTIN, V.F., prof., red.; PROBST, A.Ye., prof., red.; KROTOV, V.A., prof., red.; VASIL'YEV, P.V., doktor ekonom.nauk, red.; LYUDOGOVSKIY, G.I., kand.tekhn.nauk, red.; SHKOL'NIKOV, M.G., kand.ekonom.nauk, red.; KLYUSHKIN, P.A., red.izd-va; DOROKHINA, I.N., tekhn.red.

(Continued on next card)

ROSTOVTSEV, N.F.----(continued) Card 2.
[Development of the resources of Eastern Siberia: agriculture]
Razvitie proizvoditel'nykh sil Vostochnoi Sibiri: Sel'skoe khoziaistvo. Moskva, Izd-vo Akad.nauk SSSR, 1960. 426 p.
(MIRA 13:6)

1. Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy Sibiri. 1958, Irkutsk. 2. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Rostovtsev). 3. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Sokolov). 4. Chleny-korrespondenty AN SSSR (for Veyts, Levitskiy, Nekrasov, Pustovalov, Khachaturov). 5. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov). 6. Zamestitel' predsedatelya Gosplana RSFSR (for Grafov). 7. Chlen Gosplana RSFSR (for Gashev).
(Siberia, Eastern--Agriculture)

SOKOLOV, N.S., prof.

Reliable way to increase crop yields. NTO 3 no. 1:3-6 Ja '61. (MIRA 14:2)

1. Chlen-korrespondent Vsesoyuznoy Akademii sel'skokhozyaystvennykh nauk imeni V.I. Lenina, zamestitel' akademika-sekretarya Otdeleniya zemledeliya Vsesoyuznoy Akademii sel'skokhozyaystvennykh nauk imeni V.I. Lenina. (Field crops)

SOKOLOV, N.S.

Add the use of berbicides of other weed control measures. Zemledelie 23 no.3:30-38 Mr '61. (MIRA 14:3)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina.

(Herbicides)

SOKOLOV, N.S., otv. red.; SHIPINOV, N.A., red.; CHESALIN, G.A., red.; YAKOVLEV, B.V., red.; BLOKHINA, V.V., red.; GUREVICH, M.M., tekhn. red.

[Application of herbicides in agriculture; materials]Primenenie gerbitsidov v sel'skom khoziaistve; materialy. Red. kollegiia: N.S.Sokolov i dr. Moskva, Sel'khozizdat, 1962. 271 p. (MIRA 15:12)

1. Nauchno-metodicheskoye soveshchaniye po voprosam primeneniya khimicheskikh mer bor'by s sorniakami, Moskva, 1961. 2. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Sokolov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya (for Chesalin).
(Herbicides)

SOKOLOV, N.S.

Automatic control of condensate separation. Gaz. prom. 8 no.9:
11-13 S '63. (MIRA 17:8)

SOKOLOV, N.S., zasl. vrach RSFSR, otv. red.; LEPSKIY, S.S., prof., zamestitel' otv. red.; KRYLOV, N.P., kand. med. nauk, red.; RESHIN, I.G., red.; EPSHTEYN, Ye.M., red.; PANFILOVA, Ye.I., tekhn. red.

[Ozocerite in therapeutic practice] Ozokerit v lechebnoi praktike. Moskva, Mosk. obl. fizioterapevticheskaia klinicheskaia bol'nitsa, 1960. 203 p. (MIRA 15:3)

1. TSontral'nyy nauchno-issledovatel'skiy institut kurortologii i fizioterapii. 2. Moskovskaya oblastnaya fizioterapevticheskaya klinicheskaya bol'nitsa (for Sokolov, Reshin, Epshteyn).
(OZOCERITE)

SOKOLOV, N.S. (Magadanskaya oblast'); POPOV, V.M. (Magadanskaya oblast'); DYMOV, K.M. (Magadanskaya oblast'); SHUVALOV, L.V. (Magadanskaya oblast'); MATSUYEV, L.P.; BONDARENKO, I.G. (Magadanskaya oblast'); MAYO-ZNAK, Ye.S. (Magadanskaya oblast'); DZASOKHOV, Kh.B. (Magadanskaya oblast')

Eliminate infficiency in the operation of dredges. Kolyma 21 no.1:4-7 Ja '59. (MIRA 12:6)

1.Nachal'nik gornogo upravleniya (for Sokolov). 2.Nachal'nik dragi No.175 (for Popov). 3.Nachal'nik dragi No. 173 (for Dymov). 4.Nachal'nik priiska im. Gastello (for Shuvalov). 5.Zamestitel' direktora Vsesoyuznogo nauchno-issledovatel'skogo instituta zolota i redkikh metallov, Magadan (for Matsuyev). 6.Nachal'nik otdela truda i zarabotnoy platy gornogo upravleniya (for Bondarenko). 7.Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdela sovnarkhoza (for Mayo-Znak). 8.Nachal'nik priiska im. Chkalova (for Dzasokhov).
(Dredging machinery) (Hydraulic mining)

SOKOLOV, N.S., inzh.

Automatic regulation of feedwater supply to a small capacity boiler. Khim.mashinostr. no.6:35-36 N-D '63. (MIRA 17:2)

DVERNITSKIY, P.M.; SOKOLOV, N.V.; ALEKSISHVILI, T.I.; PROROKOV, N.I.;
KOMAROVA, P.I.; NOVICHKOV, I.A.; MEDVEDEV, I.F.

Strides of the "big" chemistry. Tekst. prom. 24 no.4:1-9 Ap '64.
(MIRA 17:6)

1. Predsedatel' Vladimirskogo oblastnogo pravleniya Nauchno-tekhnicheskogo obshchestva legkoy promyshlennosti (for Dvernitskiy) 2. Uchenyy sekretar' Gruzinskogo respublikanskogo pravleniya Nauchno-tekhnicheskogo obshchestva legkoy promyshlennosti (for Aleksishvili). 3. Predsedatel' Kostromskogo oblastnogo pravleniya Nauchno-tekhnicheskogo obshchestva legkoy promyshlennosti (for Sokolov). 4. Direktor Ivanovskogo khlopchatobumazhnogo kombinata im. Samoylova (for Prorokov). 5. Predsedatel' Kalininskogo oblastnogo komiteta professional'nogo soyuza rabotnikov tekstil'noy i legkoy promyshlennosti (for Komarova). 6. Direktor Korablinskogo kombinata shelkovykh tkaney iz shtapel'nogo volokna (for Novichkov). 7. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta torfyanoy promyshlennosti (for Medvedev).

SOKOLOV, N.V., mashinist elektrovoza

From steam locomotives to electric locmotives. Elek.i tepl.tiaga no.10:31 0 '57. (MIRA 10:11)

1. Depo Kurgan, Yuzhno-Ural'skoy dorogi.
(Locomotives)

SOKOLOV, Nikolay Vladimirovich; STANKEVICH, L.A., redakter; MAL'KOVA, N.V., tekhnicheskiy redaktor.

[Fire prevention in automobile establisments] Protivopozharnye meropriiatiia v avtokhoziaistvakh. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1955. 58 p. (MLRA 9:4)
(Garages--Fires and fire prevention)

SOKOLOV, N.V., inzh., red.; PETROVA, red.izd-va; STEPANOVA, tekhn.red.; SOLNTSEVA, tekhn.red.

[Instructions for making and using soil concrete in construction (SN 23-58)] Instruktsiia po izgotovleniiu i primeneniiu grunto-betona v stroitel'stve (SN 23-58). Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1958. 35 p. (MIRA 12:8)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Concrete)

S/006/60/000/06/12/025
B007/B005

AUTHOR: Sokolov, N. V.

TITLE: 12E Leveling Instrument НВ-1 (NV-1)
28

PERIODICAL: Geodeziya i kartografiya, 1960, No. 6, pp. 45-46

TEXT: The author reports on his experience made with this instrument. The Yakutskoye aerogeodezicheskoye predpriyatiye (Yakutiya Aerogeodetical Enterprise) received this device in 1959 (Ref., Footnote on p. 45). It yielded satisfactory results from the very beginning. The various advantages of this leveling instrument are pointed out, such as its light weight, sturdy structure, and its easily extensible tripod. Furthermore, the staff picture and the bubble ends of the level coincide in the field of view of the telescope. The author thinks that the present device will completely replace the leveling instrument НГ (NG). There are 1 figure, 1 table, and 1 Soviet reference.
28

VB

Card 1/1

BULANOV, N.G.; KUPRIYANOVA, L.V.; TSUKERMAN, R.V.; BUDNYATSKIY, D.M.; GEL'TMAN, A.E.;KOSTOVETSKIY, D.L.; PISKAREV, A.A.; TARANIN, A.I.; KORNEYEV, M.I.; MOISEYEV, G.I.; KENDYS, P.N.;KIRPICHEV, Ye.F., RUBIN, M.M.; SOKOLOV,N.V.; SHCHERBAKOV, V.A.; KOVALEV, N.N.; ~~BELOV, A.A.;~~ SEREBRYAKOV, G.M.; SATANOVSKIY, A.Ye., red.; RODDATIS, K.F., red ; KORKHOVA, V.I., red.; CHEREPENNIKOV, B.A., red.; KOGAN, F.L., tekhn. red.

[Manufacture of power machinery abroad] Energeticheskoe mashinostroenie za rubezhom. Moskva, 1961. 583 p. (MIRA 16:8)

1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy informatsii mashinostroyeniya.
(Electric power plants--Equipment and supplies)

SOKOLOV, N.V., doktor tekhn. nauk; LUZIN, P.M., inzh.

Study of the motion of fuel in a hammer mill using a model. Energomashinostroenie 10 no.2:41-43 F '64. (MIRA 17:6)

[illegible]

"The Theory of Dyeing: XIII. The Dependence of the Assimilation of Acid and Substantive Dyes by Certain Wool to the pH in the Dye Vats", Zhur. Prok. Khim., 9, 1948. Mbr., Lab Intermediary Products & Dyestuffs, Inst. Org. Chem., Dept. Chem. Sci., Acad. Sci., -c1949-.

SOKOLOV, N. V.

Spinning Machinery

Shredding and cleaning machinery of various designs. Tekst. prom. 12, No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

SOKOLOV, N.V.

New technique of processing synthetic into staple fiber. Tekst. prom. 14 no.11:19-23 N '54. (MLRA 8:1)

1. Starshiy inzhener Tekhnicheskogo otdela GPI-1.
(Textile fibers, Synthetic)

SOKOLOV, N.V.

Swiss textile machinery building. Tekst.prom.17 no.2:66-69 F '57.
(Switzerland--Textile machinery) (MLRA 10:2)

L 38912-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(1) IJP(c)

ACC NR: AP6017640 JD/HM/HW (N) SOURCE CODE: UR/0133/66/00/001/0090/0091 44 B

AUTHOR: Kiselev, V. S. (Engr.); Strelkov, G. S. (Engr.); Sokolov, N. V. (Candidate of Technical Sciences); Tarnavskiy, A. L. (Candidate of Technical Sciences)

ORG: NIIMetiz; Beloretsk Steel Wire and Cable Factory (Beloretskoye staleprovolochno-kanatnoye proizvodstvo)

TITLE: Improvement of the quality of nichrome microwire 18 18

SOURCE: Stal', no. 1, 1966, 90-91

TOPIC TAGS: fine wire, nichrome alloy, metal drawing

ABSTRACT: After cold drawing, 17 nichrome microwire 17 in the free state twists into curls 1-3 mm in diameter which under tension form loops and cause the wire to break. Several methods of reducing or eliminating this defect are discussed. An arrangement for eliminating the curl on a wire 0.090 mm in diameter by centering the finishing draw plate is described; a wire 0.030 mm in diameter with a curl 13-22 mm in diameter is thus obtained. Another arrangement is mentioned which produces such microwire without any curl at all. Thermal treatment of the wire was also investigated, but although the mechanical and electrical properties of the wire were satisfactory, its weldability was not, apparently because of a slight oxidation. The so-called spreading method involving the use of a D63-M flattening mill was also tested with good results. Orig. art. has: 5 figures. 26 10 14

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001 UDC: 621.771.4/9

Card 1/1

SOKOLOV, N.V.

SOKOLOV, N.V., dotsent.

Protective inhibition in surgery of thyrotoxicoses. Khirurgiia no.2: 38-43 F '54. (MLRA 7:5)

1. Iz kafedry fakul'tetskoy khirurgii (zaveduyushchiy - professor M.G.Zaytsev) Sverdlovskogo meditsinskogo instituta (direktor - professor A.F.Zverev). (Thyroid gland--Diseases)

CHIGARIN, A., kand.med.nauk; SOKOLOV, N.V., prof.; SIGAL, I.Z.

New drugs. Kaz.med.zhur. 40 no.1:102-103 Ja-F '59.
(MIRA 12:10)

(DRUGS)

SOKOLOV, N.V., prof.;

Tatar A.S.S.R. Society of Surgeons. Kaz. med. zhur. no. 4:85-86 Jl-Ag '60. (MIRA 13:8)

1. Predsedatel' khirurgicheskogo obshchestva Tatarskoy ASSR.
(TATAR A.S.S.R.--SURGICAL SOCIETIES)

SOKOLOV, N.V., prof.

History of the Kazan Surgical Hospital; on the 100th anniversary of its foundation. Kaz. med. zhur. no.4:106-108 Jl-Ag '61. (MIRA 15:2)

1. Zaveduyushchiy gospital'noy khirurgicheskoy klinikoy lechebnogo fakul'teta Kazanskogo meditsinskogo instituta.
(KAZAN--SURGERY)

SOKOLOV, N.V., prof. (Kazan')

"Surgical treatment of cancer and benign stenosis of the esophagus"
by A.A.Poliantsev. Reviewed by N.V.Sokolov. Kaz. med. zhur. no.4:
115-116 Jl-Ag '61. (MIRA 15:2)
(ESOPHAGUS--DISEASES) (ESOPHAGUS--TUMORS)
(POLIANTSEV, A.A.)

RAKHLIN, L.M., prof.; SOKOLOV, N.V., prof.; MONASYPOVA, M.V.;
FAYZULLIN, M.Kh., prof.; GALIMOV, I.Kh.

In the scientific medical societies of the Tatar A. S. S. R.
Kaz. med. zhur. no.2:94-96 Mr-Ap '62. (MIRA 15:6)
(TATAR A. S. S. R.—MEDICAL SOCIETIES)

SLAVIN, D. O.; SOKOLOV, N. V.; GAVRILKIN, N.N.; POPLAVKO, M. V.; SHUVALOV, Yu. A.

Tekhnologiya Metallov, published by Mashgiz, Moscow, 1949

Sum #148

SOKOLOV, N. V.

PA 195T61

USSR/Metals - Cast Iron, Melting **May 51**

"Utilization of Cast Iron Chips in Cupola Melting," M. F. Morogov, N. V. Sokolov, Engineers

"Litey Proizvod" No 5, pp 23, 24

Describes method used at "Oktyabr" plant in Krasnodar for feeding cast-iron shavings into cupola furnace. Feeding is realized by means of screw conveyer along horizontal pipe through funnel-shaped opening made in cupola lining over top row of tuyeres. In passing through opening, shavings are fused into compact mass being protected against oxidation.

195T61

TULENKOV, K.I., inzhener, laureat Stalinskoy premii; SOKOLOV, N.V., inzhener, laureat Stalinskoy premii.

[Drawing of galvanized steel wire] Volochenie stal'noi otsinkovannoi provoloki. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 75 p. (MLRA 6:8)
(Wire)

137-58-2-2986

Sokolov, N.V.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 109 (USSR)

AUTHOR: Sokolov, N.V.

TITLE: Preparing the Surface of Carbon-steel and Alloy-steel Wire for Drawing (Podgotovka poverkhnosti provoloki k volocheniyu dlya uglerodistykh i legirovannykh marok staley)

PERIODICAL: V sb.: Metiznoye proiz-vo. Nr 1. Moscow, Metallurgizdat, 1956, pp 19-33

ABSTRACT: A study was made of the equilibrium of an etching tank functioning on a periodic schedule. On the basis of this study a formula is proposed for determining the net-utilization factor of the acid, f, in the etching of carbon-steel and low-carbon-steel grades of wire. The formula is. $f = 1 - V_u C_u / V_o C_o - VC / V_o C_o$, wherein V_o and V_u are the initial and ultimate volumes of the solution (in liters), C_o and C_u the initial and ultimate acid-solution concentration (in grams per liter), V the volume of solution losses reduced to the mean concentration of acid and Fe salts within the solution (in liters). An analysis made of the relationship of f to C_u showed that the value of the initial

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137-58-2-2986

Preparing the Surface of Carbon-steel and Alloy-steel Wire for Drawing

concentration was of prime importance and that, when it was correctly chosen, a 5-8 percent saving in acid was possible. A procedure for etching wire of medium-carbon and high-carbon steel and of Cr-Ni steels and other alloys is described. Described also is a procedure for dipping carbon-steel wire in a slaked-lime solution and Cr-Ni steels and other alloys in a lime-salt solution.

P.D.

1. Steel wire--Manufacture 2. Steel wire drawing--Preparation

Card 2/2

SOKOLOV, A. V.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5312

Author: Sokolov, N. V.

Institution: None

Title: Number of Revolutions and Filling of a Tube Mill

Original Publication: Tsement, 1956, No 3, 11-13

Abstract: No abstract

Card 1/1

SOKOLOV, N.V.

25(1) PHASE I BOOK EXPLOITATION SOV/1337

Arkhipov, Vladimir Vasil'yevich; Mikhail Aleksandrovich Kasenkov; Moisey Nissonovich Larin; Yakov Il'ich Ostrovskiy; Kseniya Markovna Pogodina-Alekseyeva; Nikolay Vasil'yevich Sokolov; Gennadiy Dmitriyevich Shevchenko; and Yuriy Vladimirovich Shukhov

Tekhnologiya metallov (The Technology of Metals) Moscow, Mashgiz, 1958. 767 p. 10,000 copies printed.

Eds. (Title page): Sokolov, N.V., Professor and Larin, M.N., Doctor of Technical Sciences, Professor; Eds. (Inside book): Glikin, N.M., Docent; and Brushteyn, B.Ye., Candidate of Technical Sciences, Docent; Tech. Eds.: Uvarova, A.F.; and Sokolova, T.F.; Managing Ed. for Literature on Metal Working and Machine- Tool Manufacture (Mashgiz): Beyzel'man, R D., Engineer.

PURPOSE: This book is intended for students at vtuzes specializing in fields other than machine building.

COVERAGE: This is a textbook presenting basic data on the structure and properties of metals and alloys, as well as methods of producing and processing them. Such matters as casting, forging, welding, and heat treatment are discussed. Modern [illegible] equipment for all types of metal treatment is dsecribed. The seven broad divisions of the book are: metallurgy of ferrous and non-ferrous metals; essentials of physical metallurgy and heat treatment; casting; metal forming; welding; machining

SOKOLOV, N.V., inzh.

Calculating deformation stresses caused by the rolling of trapezoidal threads by rolls. Vest. mash. 38 no.9:29-33 S '58. (MIRA 11:10)

(Rolling (Metalwork))

MYSHKINA, M.I., bibliograf; LOBANOVA, K.N., bibliograf; RUDAKOVA, V.I., bibliograf; GORDON, L.L., bibliograf; SOKOLOV, N.V., prof., nauchnyy red. [deceased]; BARBASHIN, N.N., kand.tekhn.nauk, red.; MODEL', B.I., tekhn.red.

[Founding; a bibliography of the literature published before 1955] Liteinoe proizvodstvo; bibliograficheskii ukazatel' literatury po 1955 g. Red. N.V.Sokolova. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1959. 687 p. (MIRA 12:7)
(Bibliography--Founding)

SOKOLOV, N.V.; LEVIN, A.I.

Electrolytic treatment of ceramic metal spinnerets. Trudy Ural. politekh.inst. no. 96:42-49 '60. (MIRA 14:3)
(Ceramic metals)

37970

S/137/62/000/005/066/150
A006/A101

11350

AUTHORS: Sokolov, N. V., Golomazov, V. A.

TITLE: The manufacture of micron-size wire by the method of electrolytic dissolving

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 36, abstract 5D206 ("Tr. Konferentsii po metizn. proiz-vu, 1959", Chelyabinsk, 1961, 149-154)

TEXT: An electrolytic method was developed for manufacturing wire of down to 5 µ in diameter from alloy X 20H 80 (Kh20N80). A design was developed of a multi-cell electrolytic bath with contactless current connection (d-c or a-c) to the wire being processed; the inter-cell electric insulation is brought about by the aid of a narrow cylindrical channel in the dielectric. The method of electrolytical dissolving makes it possible to obtain bright wire whose homogeneity is not inferior to a wire produced by drawing. Wire of 6.0; 7.0 and 8.0 µ in diameter, made of alloy Kh20N80, by the developed method, meets the consumer's requirements. From the economical point of view the production by

X

Card 1/2

18 1500
1.1700

27929 S/133/61/000/006/014/017
A054/A129

AUTHORS: Zubov, V. Ya., Doctor of Technical Sciences, Sokolov, N. V., Candidate of Technical Sciences, Krasil'nikov, L. A., Grachev, S. V., Engineers

TITLE: Deformation of metastable austenite and strength of steel strip

PERIODICAL: Stal', no. 6, 1961, 549-551

X

TEXT: As a result of extensive research new ways were found to increase the strength of steel. Based on P. P. Anosov's studies, V. D. Sadovskiy (Ref.2: L. V. Smirnov, Ye. N. Sokolkov and V. D. Sadovskiy: Proceedings of the Institute of the Physics of Metals UFAN, 1956, no. 18, 35-36) put forward the suggestion that the excellent mechanical properties of Damascus blades were due to a combination of forging and hardening. With this theory in mind and the knowledge that the strength of alloyed steels could be raised by plastic deformation of austenite in supercooled condition, a so-called "thermo-mechanical" treatment was established for 65Г (65G) and ЭИ 142 (EI142) type 2-mm thick spring wires. In the tests the wire was deformed (flattened) after heating until austenite formation and after cooling in tin bath from 380-400°C (Fig. 2). The strip (0.7 x 2.63 mm) processed by the new method in the laboratory was annealed at various

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temperatures. Next the strength limit, the quantity of residual austenite and the microstructure of the strips under hardened condition were examined. It was found that by tempering at a temperature of up to 350°C with a holding time of 5 minutes the strength limit of EI142 steel increased to 300 kg/mm^2. Maximum strength for 65G steel (280 kg/mm^2) was obtained at a lower annealing temperature (300°C, holding time: 5 minutes). The transformation of austenite in 65G steel during annealing takes place more quickly than in EI142 steel. At 300°C and a holding time of 5 minutes the amount of residual austenite is no more than 10% in 65G steel, while at 360°C and a holding time of 1 minute nearly the entire quantity of austenite will be transformed. The microstructure of the test steels after flattening (with supercooled austenite and upon cooling at room temperature) displays elongated, dark grains with curved sliding surfaces in dense arrangement. These are evidently the products of the second stage of austenite transformation, which develops under the effect of plastic deformation on the disintegration of supercooled austenite. The tests were carried out with the cooperation of Engineer Yu. P. Surkov and Technician A. G. Lysenko. There are 5 figures and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Beloretskiy staleprovolochnyy zavod (Beloretsk Steel-Wire Plant)
Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SOKOLOV, N.V., Cand Tech Sci—(diss) "Certain ways of perfecting the manufacture of steel zinc-plated wire." Sverdlovsk, 1958. 13 pp (Min of Higher Education USSR. Ural Polytech Inst im S.M. Kirov), 100 copies (KL,30-58,128)

GALIMKHANOV, K.G.; KUVSHINOV, Yu.A.; SOKOLOV, N.V.

Semiautomatic device for measuring the leastic limit of wire.
Izm.tekh. no.8:32-34 Ag '62. (MIRA 16:4)
(Elastic rods and wires--Measurement)

OSETROV, P.P.; SOKOLOV, N.V.; KOROLEV, V.D.; DEMENT'YEV, V.F.; KUZNETSOVA, R.M.

High durability drilling ropes. Metallurg 7 no.12:28 D '62.
(MIRA 15:12)

1. Beloretskiy staleprovolochno-kanatnyy zavod.
(Wire rope)

SOKOLOV, N.V., kand.tekhn.nauk; SHCHETKIN, L.I.; GOKHBERG, Ya.A., inzh.;
KRASIL'NIKOV, L.A., inzh.; DMITRIYEV, V.M., inzh.

Production of rope wire with a heavy zinc coating. Stal' 22
no.4:368-370 Ap '62. (MIRA 15:5)

1. Beloretskiy staleprovolochno-kanatnyy zavod.
(Wire drawing) (Zinc plating)

SOKOLOV, N.V., kand.tekhn.nauk; KRASIL'NIKOV, L.A., inzh.; SHCHETKIN, L.I.; SILANT'YEV, L.A.

Effect of surface treatment and the conditions of zinc plating on the quality of steel wire coatings. Stal' 23 no.9:856-857 S '63. (MIRA 16:10)

1. Beloretskiy staleprovolochno-kanatnyy zavod.

KRASIL'NIKOV, L.A.; SOKOLOV, N.V.; LYSENKO, A.G.

Determining stress relaxation in wire rope strands used for prestressing of reinforcements. Sbor. trud. TSNIICHM no.32: 192-195 '63. (MIRA 16:12)

GALIMKHANOV, K.G.; KUVSHINOV, Yu.A.; SOKOLOV, N.V.

Methods and equipment for the determination of the technical elasticity limit of thin spring wire under the effect of torsion. Sbor. trud. TSNIICHM no.32:205-208 '63. (MIRA 16:12)

KRASIL'NIKOV, L.A., dotsent; SOKOLOV, N.V., kand.tekhn.nauk

Effect of curling during the drawing process on the mechanical properties of wire. Stal' 24 no.2:185-186 F '64. (MIRA 17:9)

1. Beloretskiy metallurgicheskiy kombinat.

SOKOLOV, N.V., kand. tekhn. nauk; BURKOV, G.G., inzh.; KRASIL'NIKOV, L.A., inzh.; GOLOMAZOV, V.A., inzh.; BOBYLEVA, S.F.; LYSKOV, I.K.; Prinimali uchastiye: BREZHNEV, I.S.; SHCHETKIN, L.I.; YERMATSKAYA, A.M.; ANDRIANOVA, A.L.; SILANT'YEV, L.A.; NADEZHDINA, A.A.; LAKHMOSTOVA, F.S.; DEMENT'YEV, V.F.

Improvement of the processes of manufacturing high-strength, steel brass plated wire. Stal' 24 no.8:756-759 Ag '64. (MIRA 17:9)

1. Beloretskiy staleprovolochno-kanatnyy zavod.

ARKHIPOV, Vladimir Vasil'yevich, dots; KASHENKOV, Mikhail Aleksandrovich, dots., kand. tekhn. nauk~~; LARIN,~~ Moisey Nisonovich, prof., doktor tekhn. nauk; SOKOLOV, Nikolay Vasil'yevich, prf. [deceased]; SHEVCHENKO, Gennadiy Dmitriyevich, dots., kand. tekhn. nauk; SHUKHOV, Yuriy Vladimirovich, dots., kand. tekhn. nauk; SHCHERBAKOV, G.S., red.

[Technology of metals] Tekhnologiia metallov. [By] V.V. Arkhipov i dr. Izd. 2., perer. Moskva, Vysshaia shkola, 1964. 563 p. (MIRA 17:10)

ACC NR: AP6022512 SOURCE CODE: UR/0133/66/000/004/0379/0383

AUTHOR: Sokolov, N. V. (Candidate of technical sciences); Bobyleva, S. F. (Engineer); Rol'shchikov, L. D. (Engineer); Andrianova, A. L. (Technician)

ORG: None

TITLE: Spring wire from stainless steel

SOURCE: Stal', no. 4, 1966, 379-383

TOPIC TAGS: stainless steel, spring, mechanical property, wire product, magnetic property

ABSTRACT: The authors study the effect of the chemical composition and specific production factors of various varieties of stainless steel on mechanical and magnetic properties of wire during drawing. The results of the study show that it is necessary to suppress the γ→α transformation in order to produce spring wire from stainless steel which has a minimum α-phase content and high ductility. This suppression can be accomplished by increasing nickel content from 10.5 to 11.0%, maintaining minimum titanium content of not more than 5 (C-0.02)%, maintaining austenization temperatures (1050-1100°C) and multiple-pass drawing at speeds not exceeding 150-200 m/min. Nevertheless, the production of wire from Kh18N10T steel which contains nickel at the upper limit given by GOST 5632-61 does not guarantee attainment of the strength requirements. This

Card 1/2 UDC: 621.771.42

KASHANSKIY, Mikhail Stanislavovich; PINSKIY, Iosif Yevseyevich; SOKOLOV, Nikolay Vladimirovich; ALEKSEYEV, P.M., inzh., retsenzent; KLIN, S.V., inzh., retsenzent; YEROMITSKAYA, Ye.Ye., red.

[Standardization and technology of the manufacture of marine pipe fittings] Tipizatsiia i tekhnologiia izgotovleniia sudovoi armatury. Leningrad, Sudostroenie, 1964. 317 p. (MIRA 18:2)

PA 37/49T105

SOKOLOV, N. V.

Jul/Aug 48

USSR/Minerals
Coal, Pulverized
Coal Breakers

"Connection Between the Coefficients of Pulverizability of Coal According to the Scales of TsKTI and Hardgrove," N. V. Sokolov, Cand Tech Sci, Cen Sci Res Boiler and Turbine Inst imeni Polzunov, 1 p

"Kotloturbostroy" No 4

Gives method to convert coal pulverizability coefficients from ASTM (Hardgrove) scale to TsKTI scale. This will facilitate testing of imported coal pulverizers working at USSR power stations. Includes graph.

37/49T105

[redacted]

SOKOLOV, N. V.

Coal

Resistance of Coal to Pulverization, reviewed by P. G. Sal'kov, Izv. VTI, 21, No. 2, 1952

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED

Sokolov, N. V.

PERIODICAL ABSTRACTS

AID 4176 - P

Sub.: USSR/Engineering

ROMADIN, V. P., M. L. KISEL'GOF, and N. V. SOKOLOV. OPREDELENIYE MOSHCHNOSTI I PROIZVODITEL'NOSTI SHAROVYKH BARABANNYKH MEL'NITS (Determining the capacity and output of drum type coal mills). Teploenergetika, no. 2, F 1956: 56-60.

A theoretical analysis of the performance of coal mills considering the amount of electric energy required for their operation, the types of ventilators and separators etc. Tables show various types of coal and the mill output. A mathematical analysis for computing the drum mill operation is presented. Six diagrams.

AID P - 4232

Subject : USSR/Heat and Power Engineering

Card 1/1 Pub. 110 a - 13/15

Authors : Romadin, V. P., N. V. Sokolov, Docs. of Tech. Sci., and M. L. Kisel'gof, Kand. Tech. Sci.

Title : Determining the efficiency of fuel-pulverizing mills

Periodical : Teploenergetika, 3, 58-61, Mr 1956

Abstract : The present standards for pulverizing mills are considered unsatisfactory. The authors suggest a new method for the computation of the mills' efficiency and give a detailed mathematical analysis to substantiate their report.

Institutions: All-Union Heat Engineering and Central Boiler and Turbine Institute

Submitted : No date

SOKOLOV, N.V., professor.

Number of revolutions and filling of a tube mill. TSement 22
no.3:11-13 My-Je '56. (MLRA 9:8)
(Crushing machinery)

SOKOLOV, N.V., doktor tekhnicheskikh nauk.

Analysis of the operation of shaft-type impact mills and report of experimental data. Energomashinostroenie 3 no.3:7-12 Mr '57.
(Coal, Pulverized) (MIRA 10:4)

SOKOLOV, N.V., doktor tekhn. nauk; OSOKIN, V.P., inzh.

Testing the ShK 380/550 ball mill with cone cylinder.
Energomashinostroenie 7 no.3:42-43, 48 Mr '61. (MIRA 16:8)

(Coal, Pulverized) (Boilers—Firing)

FOMIN, Boris Vasil'yevich; SOKOLOV, O., red.

[From the spark to the laser] Ot iskry do lazera. Moskva, Izd-vo "Znanie," 1964. 157 p. (Narodnyi universitet: Estestvennonauchnyi fakul'tet, nos.11-12)
(MIRA 17:11)

SOKOLOV, O., inzh.

Pumps in the Bering Strait. Znan.ta pratsia no.9:5-7 S '62. (MIRA 15:11)

(Arctic regions--Climate)

KRAMAROV, Grigoriy Moiseyevich; SOKOLOV, O., red.

[At the dawn of astronautics; on the occasion of the 40th anniversary of the founding of the first Society of Interplanetary Communications in the world] Na zare kosmonavtiki; k 40-letiiu osnovaniia pervogo v mire Obshchestva mezhplanetnykh soobshchenii. Moskva, Znanie, 1965. 94 p. (MIRA 18:7)

SOKOLOV, O.A.

Device for voltametric determination of oxygen dissolved in water. Ryb. prom. no.54:56-72 '60. (MIRA 15:9)
(Voltameter) (Water--Oxygen content)

VOROSHILOV, Metislav Sergeyevich; SOKOLOV, T.N., prof., doktor tekhn. nauk, retsenzent; SOKOLOV, O.A., inzh., red.; CHFAS, M.A., red.izd-va; SHCHETININA, L.V., tekhn. red.

[Elements of numerical program control systems for machine tools] Elementy sistem tsifrovogo programmnogo upravleniia metallorezhushchimi stankami. Moskva, Mashgiz, 1963. 243 p. (MIRA 16:7)

(Machine tools--Numerical control)

GOGOLINA, T.V., inzh.; KROTKOV, V.N., inzh.; SOKOLOV, O.A., inzh.

Gas-driven refrigerator compressor for the petroleum processing and chemical industry. Khol.tekh. 41 no.1:7-11 Ja-F '64. (MIRA 17:3)

1. TSentral'noye konstruktorskoye byuro kholodil'nogo mashinostroyeniya (for Gogolina, Krotkov). 2. Gosudarstvennyy proyektnyy i nauchno-issledovatel'skiy institut promyshlennosti sinteticheskogo kauchuka (for Sokolov).

SOKOLOV, O.N., inzh.

Submarine illumination. Trudy VNIRO 36:295-303 '58. (MIRA 12:4)

(Light)
(Fisheries--Research)

SOKOLOV, O. A.

BORODATOV, V.A., kand.biolog.nauk; DEMIDOV, V.F.; DUKHANIN, A.N.; ZHUKOVA, A.I.; KADIL'NIKOV, Yu.V.; KARPECHENKO, Yu.L.; KORZHOVA, Yu.A.; MAKHOVER, Z.I.; PETROV, G.P.; PROSVIROV, Ye.S.; RULEV, N.N.; SOKOLOV, O.A.; SPICHAK, M.K.; KHROMOV, N.S.; SHUIN, V.I., red.; FORMALINA, Ye.A., tekhn.red.

[Study of tuna fish and sardines in the eastern part of the Atlantic Ocean; report on the cruise of the scientific fishery survey expedition of 1957] Issledovaniia tuntsa i sardiny v vostochnoi chasti Atlanticheskogo okeana; reisovyi otchet nauchno-poiskovoi ekspeditsii, 1957 g. Moskva, 1959. 158 p. (MIRA 13:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Atlantic Ocean--Tuna fish) (Atlantic Ocean--Sardines)
(Fish, Canned)

S/077/60/005/006/002/003
B019/B067

AUTHORS: Rybakov, V. I., Nikolayenko, A. G., Sokolov, O. A.

TITLE: Motion picture of the movement of a body in two media

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 5, no. 6, 1960, 424-432

TEXT: The authors discuss the photographing technique of bodies moving from one medium into an optically different medium or of bodies whose movements produce cavitations in the medium. When studying the former type of movement the authors used reflected light, for the second type they used transmitted light. First, problems of illumination and geometrical problems are dealt with and some examples are given. To choose the proper illumination of a body in water the authors studied the light flux entering the camera by taking account of the light scattering caused by the water. They also determine the number of illuminators and their position. Furthermore, they study the influence of light refraction on the apparent size of a body in water. When photographing a body on its passage from one medium into the other the optical distortion and

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Motion picture of the movement ...

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the different optical densities of the media are to be taken into account in the experimental arrangement. Experimental arrangements used by the authors are discussed based on Figs. 5 and 6. The first experimental arrangement is used to study the penetration of a falling body into water, the second is used to study the rapid movement of a body in water (with the formation of cavities). In the following the authors discuss the experimental arrangements for floating up the cavities, in which two mirrors are used for observations in horizontal and vertical directions, and for the penetration of a body moving very rapidly on a ballistic trajectory from air into water. There are 12 figures.

SUBMITTED: July 8, 1959

Card 2/4

SOKOLOV, C.A.

Results of the fourth expedition of the submarine "Severianka."
Biul. Okean kom. no.8:29-31 '61. (MIRA 15:1)
(Norwegian Sea--Fisheries--Research)

SOKOLOV, O.A.

The possibility of estimating vertical distribution of plankton masses by the coefficient of light attenuation. Biul. Okean kom. no.8:84-89 '61. (MIRA 15:1)
(Plankton research) (Sea water--Optical properties)

SOKOLOV, O.A.

Visual underwater observations during the fifth cruise of the submarine "Severianka." Okeanologiia 1 no.4:757-761 '61. (MIRA 14:11)

(Barents Sea--Oceanographic research)
(Sea water--Optical properties)

S/169/62/000/009/097/120
D228/D307

AUTHORS: Ryzhenko, M. I., Sokolov, O. A., Zolotov, S. V. and Khromov, N. S.

TITLE: 7th scientific-research voyage of the submarine 'Severyanka'

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 3, abstract 9V19 (Okeanologiya, 1, no. 6, 1961, 1094-1096)

TEXT: The voyage took place on December 1-31, 1960, in the Sea of Norway, principally in herring fishing areas. The Scientific-Research Ship 5 'Professor Mesyatsev' was used for the expedition. The voyage took place under unfavorable conditions, but was, on the whole, fruitful. Ichthyologic observations (on the behavior of herring, when cine-surveying was applied) were carried out, as were observations on the plankton distribution, the performance of a pelagic trawl, and the underwater visibility of colored nets at depths of 7 and 25 m under conditions of twilight illumination. /Abstracter's note: Complete translation./

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SOKOLOV, Oleg Aleksandrovich; AZHAZHA, Vladimir Georgiyevich;
ZHERDETSKAYA, N.N., red.; MALEK, Z.N., tekhn. red.

[Submarine motion-picture photography] Podvodnaia kinos"emka. Moskva, Iskusstvo, 1962. 111 p. (MIRA 15:7)
(Motion-picture photography, Submarine)

S/169/62/000/011/056/077
D228/D307

AUTHOR: Sokolov, O.A.

TITLE: New underwater research facilities

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 2, abstract 11V13 (Nauchno-tekhn. byul. Polyarn. n.-i. i proyektn. in-ta morsk. rybn. kh-va i okeanogr., no. 1 (19), 1962, 25-26)

TEXT: The following equipment was demonstrated at the 10th Pacific Ocean Scientific Congress (Honolulu, VIII-IX 1961). 1) The new "Kurosio" hydrostat (Japan) -- a submarine (for 4-6 persons), connected with the parent ship by a 600 m power cable -- is intended for 24-hourly work at depths to 200 m. 2) A hydrostat with a mechanical arm, or a camera-manipulator (USA), for working at depths to 6000 m; it was designed on the basis of the latest techniques of aeronautics and manipulation systems (being applied in atomic industry). 3) Apparatus for recording dates, times, depths and ship coordinates on perforated tape (USA).
[Abstracter's note: Complete translation]

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S/169/62/000/011/059/077
D228/D307

AUTHOR: Sokolov, O.A.

TITLE: ПФА-2 (PFA-2) underwater photographic automat

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 6, abstract 11V42 (Nauchno-tekhn. byul. Polarn. n.-i. i proyektn. in-ta morsk. rybn. kh-va i okeanogr., no. 1 (19), 1962, 27-29)

TEXT: The device is intended for fish shoal, bottom and fishing implement surveys under commerical conditions at depths down to 1000 m. The device is made in the form of two mobile spheres on a common frame. In the first there is a camera with electromagnetic triggering and a driving spring. The second has a pulse luminaire, the power supply, and a program mechanism. Plane-parallel optical quartz glass is in the illuminators. The flash energy of the luminaire is 40, 60, and 100 j, the duration being respectively 0.5, 1.0 and 2.0 msec (which eliminates the possibility of any organism reacting on the flash). The equipment is let out from the vessel on a

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S/169/62/000/011/059/077
D228/D307

ПФА-2 (PFA-2) underwater ...

cable or together with the fishing tackle. Its experimental model has been produced at the factory NIIMRP.
[Abstracter's note: Complete translation]

Card 2/2

SOKOLOV, O.A.

Work of the Committee on Submarine Research. Okeanologiia 2 no.3:527-529 '62. (MIRA 15:7)

(Oceanographic research)

SOKOLOV, O.A. (Moskva)

Underwater visibility of objects in open waters. Okeanologiia 4 no.4: 564-573 '64. (MIRA 17:10)

L 04071-67 EWT(1) GW/GD

ACC NR: AT6024964 (N) SOURCE CODE: UR/0000/65/000/000/0140/0153

25

B+1

AUTHOR: Sokolov, O. A.

ORG: none

TITLE: Determination of the transparency of water by means of disks

SOURCE: AN SSSR. Okeanograficheskaya komissiya. Sektsiya podvodnykh issledovaniy. Razvitiye morskikh podvodnykh issledovaniy (Development of underwater marine research). Moscow, Izd-vo Nauka, 1965, 140-153

TOPIC TAGS: hydrophotometer, water, optic property

ABSTRACT: In this article the author mathematically estimates the optical indexes of water with respect to visibility of black objects, the visibility of a standard white disk, the transparency of two and three disks with respect to visibility, estimates transparency by means of a visibility measuring device, and examines the effect of certain factors on the accuracy of disk hydrophotometry. The author indicates that it is necessary to approach with great caution the measurement of the sum of the indexes of attenuation of direct and scattered light by means of disks. When measurements are taken in oceanic waters, for example, the weather conditions must be properly selected. Evidently, cloudy or hazy weather is most suitable in this

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ACC NR: AT6024964

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case. In all cases it is necessary to have an accurate value of the coefficient of diffuse reflection of the sea and to trace the accuracy of determination of the depth of sinking of the disk. With proper consideration of all these factors which can affect the accuracy of the measurements, the accuracy can be made no lower than 10%. Despite the low accuracy of the measurements for the upper layers of water, disk hydrophotometry makes up for this by its simplicity and its accuracy is therefore satisfactory for many practical cases, and should be used more widely. Orig. art. has: 6 figures and 34 formulas.

SUB CODE: 08,14 / SUBM DATE: 06Dec65/ ORIG REF: 004/ OTH REF: 002

kh

BR

S/0044/64/000/002/V024/V024

ACCESSION NR: AR4031087

SOURCE: Referativny*y zhurnal. Matematika, Abs. 2V153

AUTHOR: Sokolov, O. B.

TITLE: The theory of oriented schemes

CITED SOURCE: Sb. Itog. Nauchn. konferentsiya Kazansk. un-ta za 1962 g. Sekts. matem. n. Kazan', Kazansk. un-t, 1963, III

TOPIC TAGS: oriented scheme cross-section, connected oriented scheme, empty sub-scheme, optimal connected-oriented scheme, apex indexing algorithm

TRANSLATION: This article is devoted to finding cross-sections of oriented schemes. The author introduces the concept of an oriented scheme. The concepts concerning ordinary graphs and schemes are applied to oriented schemes. The author introduces the concept of a connected oriented scheme. He then proves a necessary and sufficient condition for connectedness of an oriented scheme. The concepts of an empty (dummy) sub-scheme and a connected-oriented optimal scheme

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ACCESSION NR: AR4031087

are introduced. An algorithm is given for indexing the apexes of an optimal connected-oriented scheme, which provides a method for finding cross-sections of the given scheme. Authors' resume

DATE ACQ: 19Mar64

SUB CODE: MM

ENCL: 00

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S/0044/64/000/002/V024/V024

ACCESSION NR: AR4031088

SOURCE: Referativny*y zhurnal. Matematika, Abs. 2V154

AUTHOR: Sokolov, O. B.

TITLE: The application of Boolean determinants to the analysis of logical multiterminal networks

CITED SOURCE: Uch. zap. Kazansk. un-t, v. 123, no. 6, 1963, 155-164

TOPIC TAGS: Boolean determinant, logical multiterminal network, conductance matrix, Boolean function, Boolean matrix rank, minor, cofactor, Boolean vector dependence, terminal network composition representation

TRANSLATION: An (m, n)-terminal network whose conductance matrix consists of Boolean functions of p-variables is called an (m, n, p)-terminal network. Using the theory of Boolean determinants (B.d.), set forth by himself, the author solves the problem on the complexity of realizing an (m, n, p) terminal network with a conductance matrix of given rank. The B.d. of an nXn matrix with elements a_{ij} is the mod2 sum $D = \psi_1 \oplus \psi_2$, where ψ_1 (and respectively ψ_2)

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([illegible]ons taken from conjunctions $a_{1\alpha}, a_{2\beta}, \ldots a_{nw}$ over all even [illegible], respectively, odd) permutations of the indices $\alpha, \beta, \ldots, w$; the second indices are everywhere different from the first. The author presents the notions of the minor, the cofactor, the dependence of Boolean vectors, and the rank of a Boolean matrix; he derives a number of properties for the B.d. It is noted that this theory of B.d.'s differs from the one constructed by O. G. Lunets (Izb. AN SSSR. Ser. Matem.; 1952, 16, No 5, 402-426). From the representability of a Boolean mXn matrix with rank r as the product of an mXr- and an rXn-matrix, the following basic result (theorem 3) is proven: Each logical (m, n, p)-terminal network with conductance matrix of rank r can be represented as the composition of an (m, r, k)-terminal network and an (r, n, ℓ)-terminal network, and the complexity of the last two does not exceed the complexity of the realization of the (m, n, p)-terminal network; $0 \leq k, \ell \leq p$.

Abstractor's note: There are numerous misprints. In theorem 1, for "sufficient", read "insufficient." I. Strazdin

DATE ACQ: 19Mar64

SUB CODE: MM

ENCL: 00

Card 2/2

L 16389-65 EWT(m)/EWP(t)/EWP(b) IJP(c)/ESD(gs)/ESD(t)/SSD/AFWL/ASD(a)-5/ASD(m)-3/
ACCESSION NR: AP4049135 AS(mp)-2/RAEM(a) S/0020/64/159/001/0074/0076
JD

AUTHORS: Sokolov, O. G.; Mel'ker, A. I.

B

TITLE: Invar behavior of iron-manganese alloys

SOURCE: AN SSSR. Doklady*, v. 159, no. 1, 1964, 74-76

TOPIC TAGS: iron alloy, coefficient of thermal expansion, austenitic steel, antiferromagnetism

ABSTRACT: The purpose of the investigation was to obtain more details on an earlier result by the authors (with S. I. Sakhin, Sborn. Metallovedeniye, v. 7, 1963, p. 86) that medium-carbon iron-manganese nonferromagnetic alloys have an anomalous decrease in the coefficient of thermal expansion (invar character) in the austenitic region. The thermal expansion of iron-manganese alloys containing 0.02 to 56% manganese and 0.06% carbon were investigated. The samples were heat

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ACCESSION NR: AP4049135

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treated in two ways: quenching from 1175° in water, and equilibrium annealing at 1175° for 120 hours with cooling to room temperature at 1.5--2°/minute. The phase composition was determined by an x-ray structure analysis. Isotherms of the linear expansion coefficients of various alloys are shown in Fig. 1 of the Enclosure. Although the decrease in the expansion coefficient in alloys with more than 16% Mn is due in part to the decrease in the ε-phase content, the principal cause is the anomalous thermal expansion of the austenite, particularly at an Mn content above 30%, when there is no ε phase. Unlike invar alloys based on Fe-Ni, Fe-Pt, and Fe-Pd, the manganese alloys with invar properties are not ferromagnetic. An antiferromagnetic origin is ascribed to this anomaly. This phenomenon is stable, so that the Fe-Mn diagram of state should have on it a new line corresponding to the temperatures of transition from the antiferromagnetic to the paramagnetic state. This report was presented by G. V. Kurdyumov. Orig. art. has: 4 figures and 1 table.

L 16389-65
ACCESSION NR: AP4049135

ASSOCIATION: None

SUBMITTED: 20Apr64

ENCL: 01

SUB CODE: SS, MM

NR REF SOV: 006

OTHER: 004

Card 3/4

L 16389-65
ACCESSION NR: AP4049135

ENCLOSURE: 01

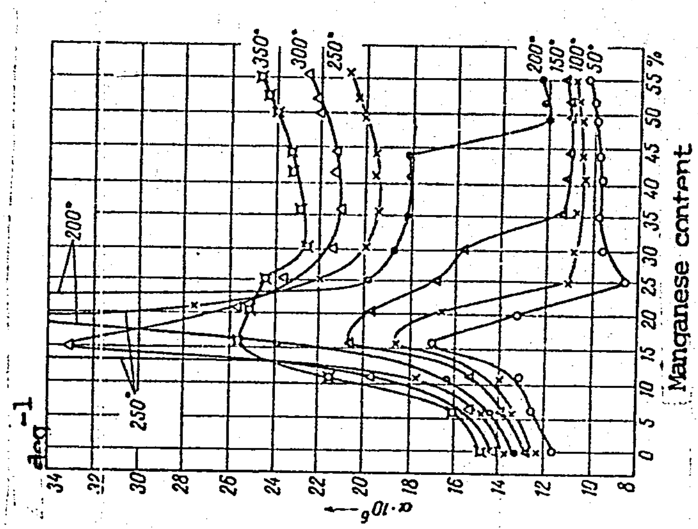

Fig. 1. Isotherms of the linear expansion coefficient of iron-manganese alloys.

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S/129/62/000/001/003/011
E193/E383

AUTHORS: Sakhin, S.I., Candidate of Technical Sciences and Sokolov, O.G., Engineer

TITLE: Increasing the strength of steels 30ХНМА (30KhNMA) and 30ХГСНА (30KhGSNA)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1962, 14 - 19 + 1 plate

TEXT: The object of the present investigation was to study the effect of the variation of several factors on the changes brought about by TMO (plastic deformation of supercooled austenite followed by conventional hardening and tempering treatment - abbreviation of the Soviet "termomekhanicheskaya obrabotka") in steels 30KhNMA and 30KhGSNA with increased carbon and molybdenum contents (0.41-0.45 and 0.45%, respectively). In contrast to various investigations in which the properties of steel subjected to TMO were measured on thin (3-6 mm thick) specimens, test pieces, 20 mm thick after TMO, were used by the present authors. In the first series of experiments, specimens of steel 30KhNMA were heated to 1 150 °C, cooled to various temperatures and after holding at a given temperature for 20 minutes,

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Increasing the strength of E193/E383

rolled at this temperature to 50% reduction, oil-quenched and, finally, tempered for 4 hours at 200 °C. The results of mechanical tests carried out on specimens treated in this manner are reproduced in Fig. 1, where the hardness (HB), yield point (σ_s, kg/mm^2), UTS (σ_b, kg/mm^2), impact strength (a_k, kgm/cm^2), elongation (δ, %) and reduction in area (ψ, %) are plotted against the deformation temperature (°C). It will be seen that maximum strength and hardness, combined with minimum plasticity, were obtained after TMO, during which the austenite was deformed at 500 °C. The decrease in strength and increase in plasticity in specimens deformed at 400 °C were attributed to bainitic transformation, this conclusion having been confirmed by metallographic examination. In a similar series of experiments, the effect of varying the degree of deformation of the austenite at 500 °C on the properties of steel subjected to TMO was studied. The hardness and strength of the steel increased with the degree of deformation increasing from 0 - 30%, then remained almost constant and increased again when the degree of deformation

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was increased from 40 - 60%. The proportion of the residual austenite after complete heat-treatment also increased with increasing degree of deformation, reached a maximum at 40% and then decreased again. Subjecting the specimens, before tempering, to sub-zero treatment at -80 °C brought about an increase in strength and hardness and a considerable decrease in the proportion of residual austenite. Since heavy reductions entailed in TMO are difficult to attain in one operation, the effect of intermediate heating was studied in the next series of experiments. To this end, specimens of steel 30KhGSNA (with 0.43% C) were subjected to the following treatment: heating to 900 °C - cooling to 550 °C - first rolling pass to 25% reduction, followed by one-hour annealing at 550 °C - second rolling pass to 25% reduction, followed by one-hour annealing at 550 °C - third rolling pass to 13% reduction, followed by oil-quenching and tempering at 275 °C. No difference was found between the properties of specimens treated by this and the standard TMO method, except that in the former case slightly higher values of impact strength were obtained

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(2.2 against 2.0 kgm/cm^2). The effect of the following treatment on the properties of steel 30KhGSNA (0.42% C) was studied in order to check the part played in TMO by grain-refinement. Heating to 900 °C - cooling to 550 °C and 25% deformation - reheating to 900 °C, holding at that temperature for 30 min, cooling to 550 °C and 25% deformation - reheating to 900 °C, holding for 30 min, cooling to 500 °C and 13% deformation - oil-quenching and 6-hour tempering at 275 °C. Also, properties similar to those produced by the standard TMO treatment were obtained in this case. In the last stage of the investigation, the part played in TMO by the products of pearlite/troostite transformation was studied. To this end, steel 30KhNMA, heated to 1 150 °C and cooled to 650 °C, was held at this temperature for 20 min or two hours, then given 50% reduction, oil-quenched and finally tempered for 4 hours at 200 °C. The properties of specimens treated in this manner were compared with those of steel subjected to identical treatment but without plastic deformation at 650 °C. The results are reproduced in Fig. 5,

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showing the UTS (σ_b, kg/mm^2), yield strength (σ_s, kg/mm^2) and impact strength (a_k, kgm/cm^2) of specimens held at 650 °C for 2 hours without plastic deformation (blocks 1), held at 650 °C for 2 hours and given 50% reduction (blocks 2) and held at 650 °C for 20 min and given 50% reduction (blocks 3). It will be seen that although the properties of steel subjected to TMO were adversely affected by the formation of pearlite and troostite, this effect was slight in comparison with that observed in steel which had not been deformed plastically at 650 °C. The properties of steel subjected to TMO are affected even more by isothermal treatment of super-cooled austenite in the Ar' region, carried out after the plastic deformation. This was revealed by tests, the results of which are reproduced in Fig. 6, where σ_b, σ_s and a_k of steel 30KhNMA are shown for specimens subjected to the following treatments: 1) oil-quenching from 1 150 °C; 2) heating to 1 150 °C, cooling to 650 °C, holding at this temperature for 2 hours and oil-quenching;

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3) heating to 1 150 °C, cooling to 650 °C, 20% plastic deformation, 2 hours at 650 °C, oil-quenching (in each case the steel was finally tempered for 4 hours at 200 °C). There are 6 figures, 2 tables and 19 references: 11 Soviet-bloc and 8 non-Soviet-bloc. The four latest English-language references mentioned are: Ref. 9: Metal Treatment and Drop Forging, v.27, no. 180, 1960; Ref. 14: D.I. Schmatz, V.F. Lackay, I.C. Schyne, Metal Progress, v.76, no. 3, 1960; Ref. 15: Steel, v. 145, no. 12, 1959; Ref. 16: Iron and Coal Trades Rev., v.180, no. 1775, 1960.

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L 11092-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD
ACCESSION NR: AP3000489 S/0129/63/000/005/0045/0048

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AUTHOR: Sakhin, S. I.; Sokolov, O. G.

TITLE: Strengthening austenitic steels 19

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1963, 45-48

TOPIC TAGS: thermomechanical treatment, high-temperature thermomechanical treatment, low-temperature thermomechanical treatment, mechanical properties, manganese austenitic steel, strengthening

ABSTRACT: The effect of thermomechanical treatment on the mechanical properties of high-Mn austenitic steels 50G20 and 50G20F [unidentified; according to designation the former contains 0.50% C and 20% Mn; the latter, 0.50% C, 20% Mn, and < 1% V] was investigated. The steels were melted in a high-frequency induction furnace, cast into 16-kg ingots, rolled, and then subjected to thermomechanical treatment (TMT). Two variants of TMT were used. In both variants specimens were annealed at 1000C (for 50G20) or 1175C (for 50G20F), cooled to 900C (high-temperature TMT) or 500C (low-temperature TMT), rolled or upset with various reductions, and immediately water-quenched. The best combination of mechanical properties was produced by the low-temperature TMT. The 50G20 steel rolled

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at 500C with 70% reduction had a tensile strength σ_b of 113.5 kg/mm², yield strength σ_s of 107.9 kg/mm², elongation δ of 18.5%, reduction of area ψ of 45.5%, and notch toughness a_k of 8.0 kg-m/cm². Corresponding figures for 50G20 water-quenched from 1000C are 75.5 kg/mm², 37.9 kg/mm², 67%, 70.5%, and 30 kg-m/cm². The 50G20F steel upset at 500C with a reduction of 40% had σ_b of 139.5 kg/mm², σ_s of 126.8 kg/mm², δ of 6%, and ψ of 9%. Aging at 600C for 10 hr brought about an additional improvement and increased σ_b to 148.0 kg/mm², σ_s to 138.0 kg/mm², δ to 7.0%, ψ to 22%, a_k to 4.8 kg-m/cm². Still higher strength, though with lower ductility, can be achieved by approaching the temperature of plastic deformation from below. The 50G20F quenched from 1175C, reheated to 600C, upset with 40% reduction, and water-quenched had σ_b of 162.8 kg/mm², σ_s of 148.0 kg/mm², δ of 2%, and ψ of 5.7%. Plastic deformation in low-temperature TMT can be done in several steps with relaxation periods or even with reheating to a temperature somewhat above that of the beginning of recrystallization. The 50G20 rolled at 500C in three passes with a reduction of 20% per pass and a 1-hr relaxation after each pass had σ_b of 125 kg/mm², σ_s of 115 kg/mm², δ of 18%, ψ of 47%, and a_k of 6.8 kg-m/cm². Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: none

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